

A PROPOSED PLAN FOR EFFECTING A REORGANIZATION OF KANSAS HIGH SCHOOLS

by

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Chapter I: The Problem and Its Scope

1. Introduction

This study is concerned primarily with the problem of the small high school in Kansas and it involves an attempt to present the actual and potential advantages of a proposed reorganization. The plan is designed to improve the opportunities for more effective high school instruction than is at present provided in the small high schools of the state. Since the type of organization and the ability to provide adequate high school facilities may be considered essential factors in determining the efficiency with which a school operates, it is the purpose of this study to show the practical advantages of the plan of reorganization which is proposed.

There were a total of 532 rural and third class city high schools in the state according to the "Educational Directory of the State of Kansas" for the school year 1925-26. The median enrollment in these schools was 61 pupils. These small high schools comprise 77 percent of all public high schools in the state. The median size of class in these small high schools is 13 pupils, while 35 percent of the classes have an enrollment of fewer than 10 pupils. (1)

(1) OBrien, F.P., "The High School Teaching Load and Preparation of High School Teachers."

When classes are small the instruction costs per pupil are usually high, whether the instruction is efficient or not. Small classes usually may be taken to indicate that a community is paying a high price for instruction, almost regardless of its quality, and large classes usually enable a community to buy instruction at a lower cost per student. As judged on this basis these schools may be expected to be rather expensive when compared with schools in which the median size of class is 20 or larger. In second class city high schools of Kansas the median class size is (2) twenty three.

The high schools in the third class cities and rural high school districts of the state are supported by a median taxable property valuation of only one and one-half million dollars. The report of valuations of school districts in the Educational Directory of the state for 1925-26 is the source of this statement. Such a small valuation frequently compels the district to place a relatively high levy upon the taxable property in order to secure sufficient funds to maintain even a mediocre high school.

Many of these schools have been hastily organized, without much constructive planning as to the kind of a school to be organized, the number of prospective stu-

(2) OBrien, F.P., Op. Cit.

dents to be educated, or the adequacy of the taxable property valuation in the district as a basis of support. It is an accepted fact that they have been established in many instances to meet a local demand without regard to the high school needs of the county or the community as a whole. Because of these limitations an inferior grade of instruction in such schools is likely to be a direct consequence.

2. Method of Procedure

This study undertakes to show the practical possibilities of the reorganization plan proposed by making application to the actual situation now existing in these small high schools. It did not seem necessary nor even possible in this study to make the application to more than a few counties in the state. These counties seem representative of much of the state so far as this problem is concerned. The four counties selected are located in different sections of the state, and each has several small high schools. The counties selected for this study were Jackson, Jewell, Kingman, and Lyon.

The application of the proposed plan of reorganization to the counties involved a study:

1. To determine how the territory of each county

might be reorganized in order to combine the small high schools into fewer high schools which will be more centrally located.

2. To estimate the changes which the proposed reorganization would bring about and make a comparison between the reorganized plan and the present situation.

3. To determine the possibility of organizing a junior high school in each of the proposed districts and to estimate the advantages that might come from that type of organization.

3. Sources of Data

The data for this study were secured from three different sources. First, considerable information pertaining to the schools in these counties was already available. It had been collected in connection with a state wide study of Teaching Load and Preparation of High School Teachers in Kansas.⁽³⁾ However, nine of the thirtyfive high schools in these four counties had not reported facts for use in that study. A brief questionnaire was effective in securing the additional data needed. The information requested concerned size of classes, range of subjects taught, tenure of teachers and principals, their academic preparation in the subjects taught, salaries of teachers and instruction costs. The data pertaining to the nine schools

(3) OBrien, F.P., Op. Cit.

to which reference has been made concern the situation for the school year 1925-26, but for the other schools the situation in 1924-25 was reported. A copy of this questionnaire appears in the appendix.

A second source of data was the records of the State Superintendent of Public Instruction. The enrollment in the 7th and 8th grades and in the high schools, the valuation of the school districts, and the tax levies of each were secured from the county superintendents annual report to the state superintendent of public instruction for the school year 1924-25.

A third source of the information needed was furnished from maps of each county prepared by the county engineer. These showed the improved roads in the counties. Further information was secured from the county superintendents pertaining to the boundaries of the present high school districts and the location of each elementary school in the four counties studied.

Chapter II: An analysis of the Present Situation in Several Counties

1. Number of High Schools and Their Enrollment

In the four counties studied there are 38 high schools. Jewell county has 11 and each of the other three counties have 9. Of these, 35 are rural high schools or third class city high schools and the other three are second class city high schools.

The enrollments of the third class city and rural high schools in the four counties, as shown in the county superintendents' annual report for 1924-25, range from 19 pupils to 138 with a median enrollment of 60 pupils. Table 1 shows the range and distribution of the enrollments in these 35 high schools of the four counties.

Table 1: Enrollment of Third Class City and Rural High Schools in Jackson, Jewell, Kingman and Lyon Counties.

	<u>No. of pupils</u>						Total
	0-25	26-50	51-75	76-100	101-125	126-150	
No. of H.S.	3	11	11	4	3	3	35

The median enrollment of these schools is practically the same as that for all high schools of this type in the state. Forty percent of these schools have an enrollment of 50 or fewer pupils. The median size of class for the schools in these counties is 13 which is the same as the median for all schools of this type in the state.

2. Analysis of Instruction Costs, Preparation and Tenure of Teachers, High School District Boundaries and Road Development

The rural and third class city high schools in the four counties had a median cost of \$13.79 per pupil-semester-hour of instruction, with the middle fifty percent falling between \$11.33 and \$18.50. This cost is relatively high when compared to the schools in Kansas which have from 11 to 30 teachers. The median instruction cost in these larger schools is \$8.79 per pupil-semester-hour, with the middle fifty percent ranging from \$8.10 to \$9.99.⁽⁴⁾

Approximately seventy-five per cent of the schools employing from 11 to 30 teachers have a lower instruction cost per pupil-semester-hour than the school which has the lowest cost per pupil-semester-hour among the rural and third class city schools in these four counties. If these smaller schools could be combined so that larger classes could be organized a saving of instruction costs could be effected. The median size of classes in these larger schools is 22 as contrasted with 13 in the smaller schools. The size of classes is probably the largest factor in determining instruction costs per pupil-semester-hour.

The median number of teachers in each school of the

(4) Instruction costs for the schools having from 11 to 30 teachers were secured from the questionnaire on the "Size and Variety of Teaching Load in Kansas High Schools"

four counties, including the principal, is four. Since all of the schools excepting one are maintaining a four year high school it becomes necessary for each teacher to teach several different subjects. Table 2 shows that 69 percent of the teachers teach three or more different subjects each semester.

Table 2: Range of Subjects Taught Each Semester

	<u>No. of Subjects</u>						total	Median
	1	2	3	4	5	6		
No. of Teachers	8	39	57	34	10	1	149	3
Percent of Total	5	26	<u>38</u>	<u>23</u>	<u>7</u>	<u>1</u>		

69

In the high schools which employ from 11 to 30 teachers the median number of different subjects taught by each teacher is only 1. (5) It is probably necessary for each teacher in these small schools to spread his work over several fields of instruction in order to secure even the minimum of variety needed in the curriculum.

Table 3 shows that the rural and third class city schools of the four counties are not offering a great variety of courses during each semester.

(5) OBrien, F.P., Op. Cit.

Table 3: Different Subjects Taught in Rural and Third Class City High Schools of Jackson, Jewell, Kingman, and Lyon Counties and the Percent of Schools Teaching Each Subject.

Subject	Percent of Schools of- fering sub- jects	Subject	Percent of Schools of- fering sub- jects
English -----	100	Latin -----	49
History -----	100	Psychology -----	49
Mathematics -----	100	Economics -----	34
General Science -----	77	Sociology -----	17
Agriculture -----	74	Botany -----	11
Physics -----	74	Biology -----	11
Home Economics -----	66	Modern Language -----	9
Civics -----	63	Physical Ed. -----	6
Commercial -----	54	Physical Geog. -----	6
Physiology -----	49	Music -----	6
Normal Training -----	49		
Manual Training -----	49		

The median number of subjects taught in the smaller schools of the four counties during the first semester was 10 and the total number of different subjects in all of the schools was 23. Evidently these schools are not attempting to provide a wide variety of courses. It is significant to note that only 6 percent of the schools report that they have tried to provide any physical education excepting that carried on in the form of athletics in their extra-curricular activities. Evidently they have not accepted "Health" as one of the cardinal principals of secondary education. Only 75 percent of these schools, which are located in rural districts, provide any courses in agriculture and only 6 (17 percent of the total) are offering courses in vocational

agriculture. The remaining schools which are offering a course in agriculture are providing only a normal training agriculture which often consists of nothing more than formal text-book assignments.

It is hardly to be expected that a teacher will be well prepared to teach three different subjects. Table 4 shows the inadequate preparation of many of the teachers in these schools.

Table 4: Preparation of Teachers in Subjects They Are Teaching in Third Class City and Rural High Schools of Jackson, Jewell, Kingman and Lyon Counties.

No. of Hours Teaching in H.S.	<u>No. of Hours Studied in College</u>									41+Tot.
	0	1-5	6-10	11-15	16-20	21-25	26-30	31-40		
4-6	58	61	50	32	28	13	15	12		12
9-11	5	8	5	8	11	5	9	6		7
14-15			3	3	4	4	6	6		5
16-20							2	2		1
Total No Classes	68	77	69	57	62	35	59	50	45	522
Perc. of Total	13	15	13	11	12	7	11	9		9

Table 4 shows that out of a total of 522 classes there are 68 classes (13 percent of the total) in which the teacher does not have a single hour of college preparation in the subjects which they are teaching. In

77 classes (15 percent) the teachers have from 5-10 hours preparation in the subjects they are teaching. College credits are not necessarily the only preparation for teaching, but if these teachers are adequately prepared to teach all of their classes they must have received their preparation elsewhere than in college classes.

If it were possible to confine a teacher's work to one or two fields of instruction by establishing larger schools then adequate educational preparation might be demanded of them. It is surely not good educational procedure to demand that teachers teach subjects for which they have had no training. By combining the small high schools and by carefully organizing the school schedule many of these handicaps might be overcome.

The turnover of teachers in the schools of these counties is very large. Table 5 shows that 35 percent of the teachers and principals are in the school system for the first year and that 34 percent have only had one year in the system. The median number of years that they have been in their present position is two.

Table 5: Tenure of Teachers and Principals of Rural and Third Class City High Schools of Jackson, Jewell, Kingman and Lyon Counties.

	<u>No. of Years in present position previous to this year</u>										
	0	1	2	3	4	5	6+	N. R.	Total	Median	
Teach.											
and											
Prin.	52	51	21	6	5	3	7	4	149	2	
Perc.											
Total	35	34	14	4	3	2	5	3			

If this situation exists over a number of years it is easy to see that the teaching staff will lack continuity. The unstable teaching force resulting from such a large 'teacher turnover' may be a menace to the educational interests of these schools. Policies extending over a number of years are not likely to be carried out under such circumstances.

Although many of the teachers are inexperienced and new in the school they probably get very little help in the way of supervision from the principal, for in the smaller schools of these counties he carries a median teaching load of four classes per day. Since he is paid considerable more salary than any of the teachers, his salary being \$240 per month as compared to \$160 per month for the teacher, it seems to be a rather poor economic policy to make of him a mere class room teacher. In addition to his teaching, a portion of his time is probably given to routine office work. The principal cannot render much supervision to the school when he devotes almost full time to classroom teaching. If several of the schools were combined it might be possible for the principal to devote all of his time to the administration and supervision of his school.

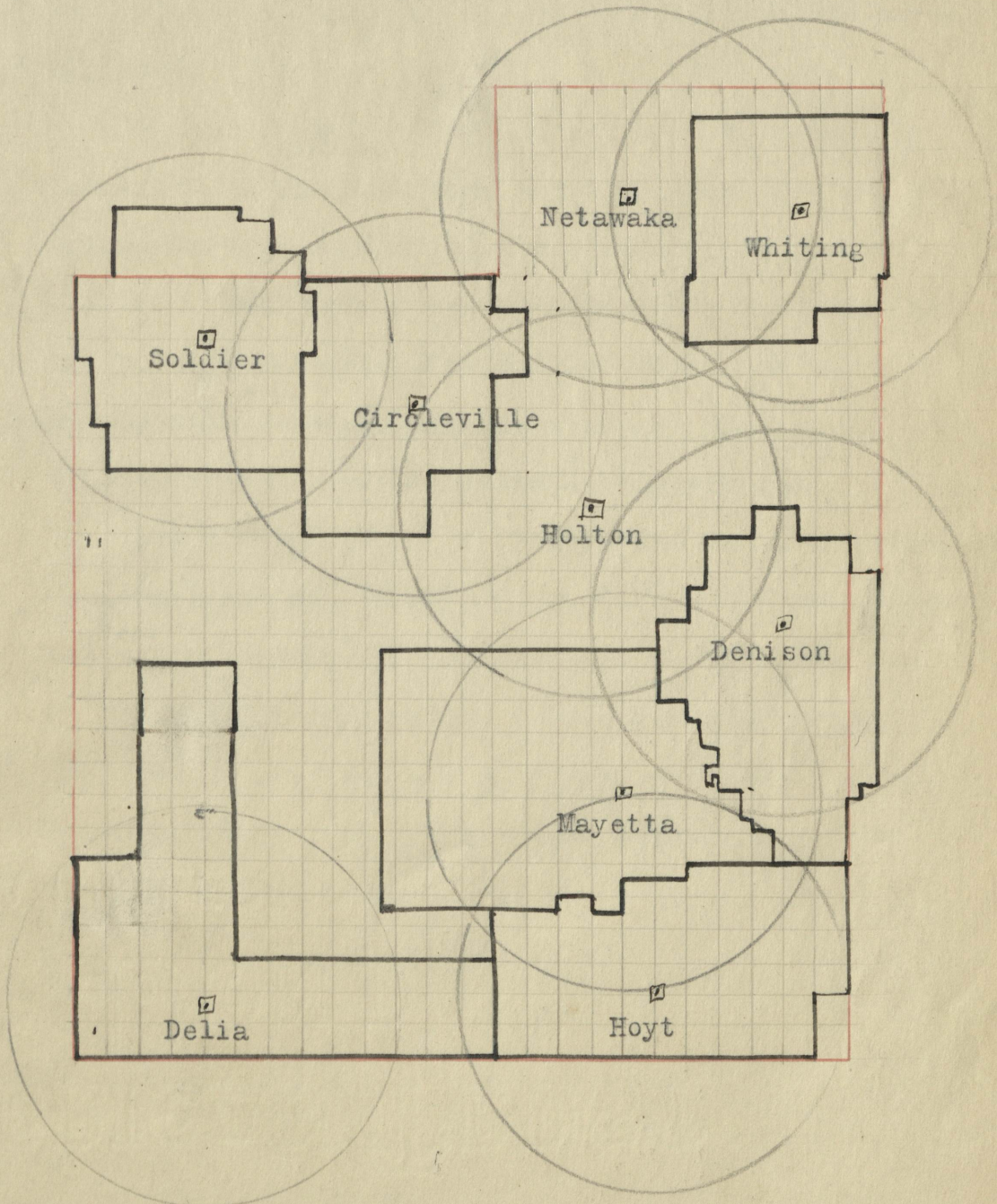
A map of Jackson county is presented on the following page showing the location of each high school and the boundaries of each rural high school district. The boundaries of these districts show that in some cases the territory has not been organized as completely as possible. To illustrate this situation several examples are pointed out. In the Delia rural high school district, territory which is twelve miles distant from the location of the high school forms a part of the district and other territory within two and one half miles is not included. The territory which lies between Delia and Mayetta rural high school is not included in any district. It might well be included in the Delia rural high school district.

Hoyt rural high school district includes territory ten miles distant from the location of the high school and other territory two miles distant is not included within the district. The boundaries of the Whiting rural high school district extend to within two miles of the Netawaka high school.

A circle with a six mile radius is drawn from each high school as a center. It is arbitrarily assumed that it might be possible for a high school to serve the territory within a six mile radius. Each rural high school as now organized includes territory within its boundaries which is six miles distant from the location of the high school. A glance at the map will show that the circles with Soldier and Holton as centers include most of

CHART I: JACKSON COUNTY HIGH SCHOOL DISTRICTS

- Location of Senior High Schools
 Boundaries of Rural High School Districts
 Section Lines
 6 mile Radius of Circle

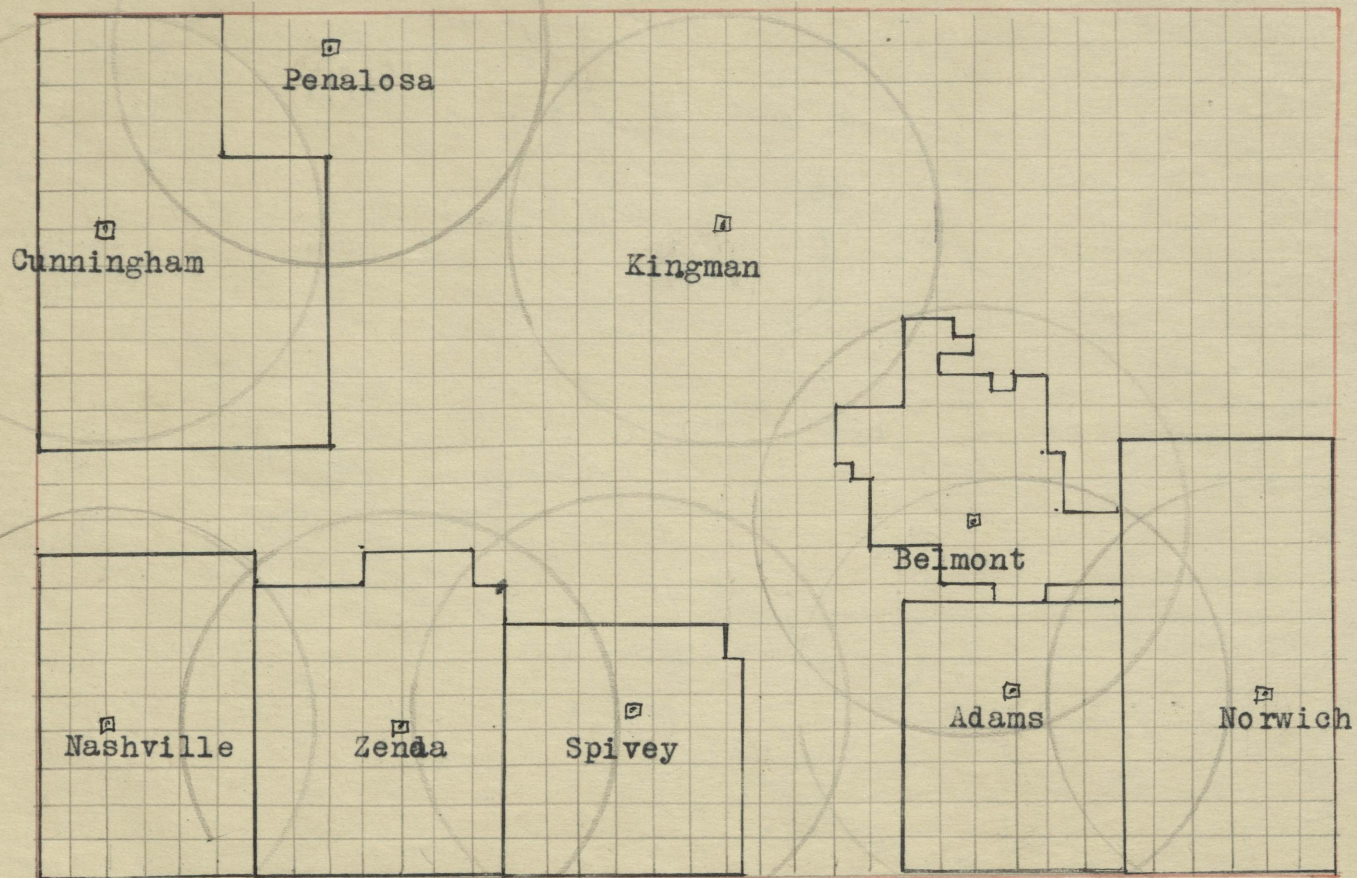


the territory now located in the Circleville district. Netawaka falls within the circle drawn with Whiting as a center. Circles with Holton, Denison and Hoyt as centers include most of the territory in the Mayetta district.

Maps of Kingman, Jewell, and Lyon counties are presented on the following pages to show that the situation is very similar to that existing in Jackson county. Each county has approximately the same number of high schools. The circles show that there is considerable overlapping of territory which might very well be assigned to the several high schools.





The northern part of Kingman and Jewell counties and the southern part of Lyon counties are different from the other sections of the counties in that they do not have any high schools. Jewell, Kingman and Lyon counties do not have quite as much of their territory organized into rural high school districts as does Jackson county.

CHART II: KINGMAN COUNTY HIGH SCHOOL DISTRICTS



•
 Location of Senior High Schools
 Boundaries of Rural High School District
 Section Lines
 six miles Radius of Circle

CHART III: JEWELL COUNTY HIGH SCHOOL DISTRICTS

-  Location of Senior High Schools
 Boundaries of Rural High School Districts
 Section Lines
 six miles Radius of circle

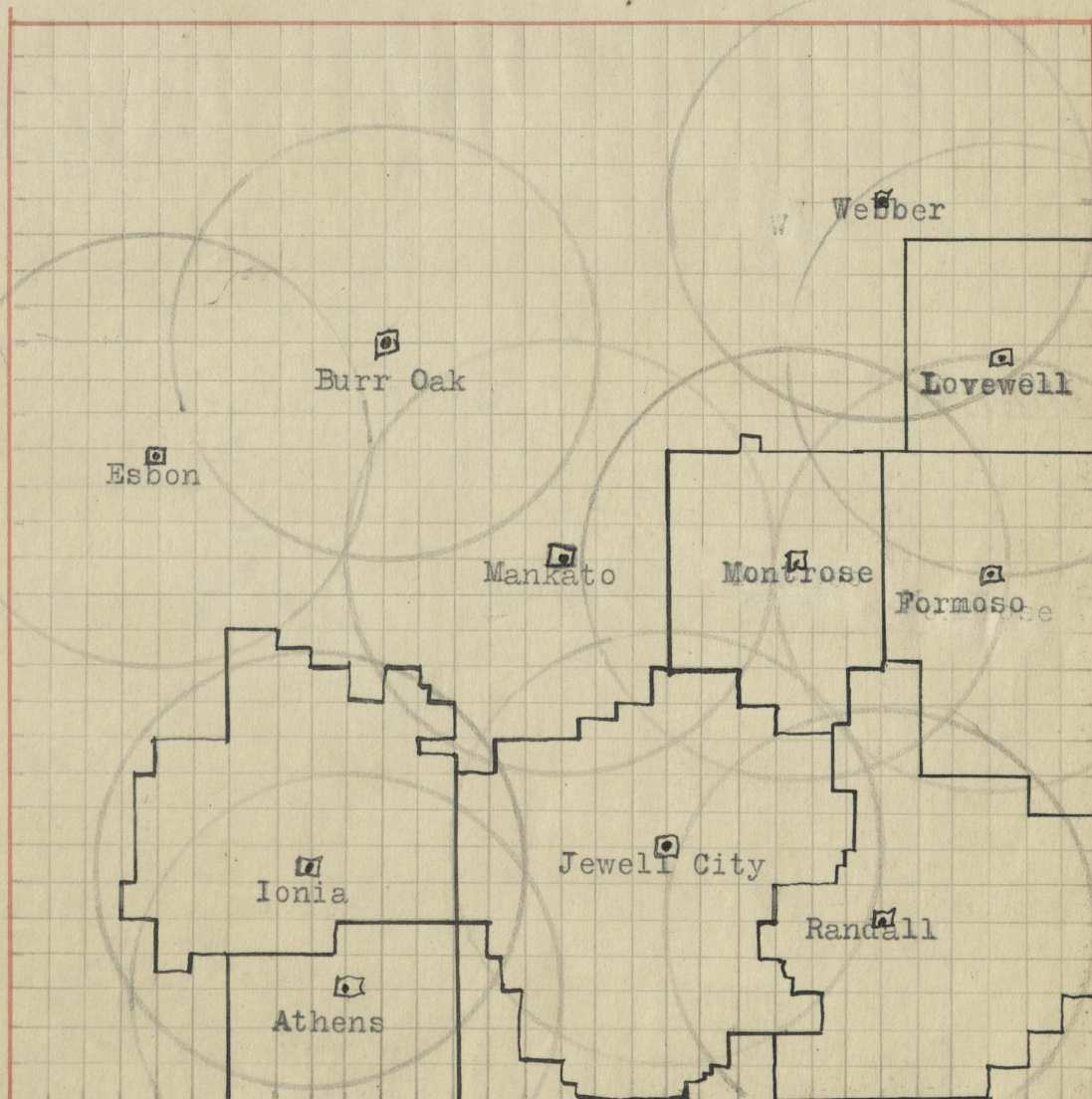
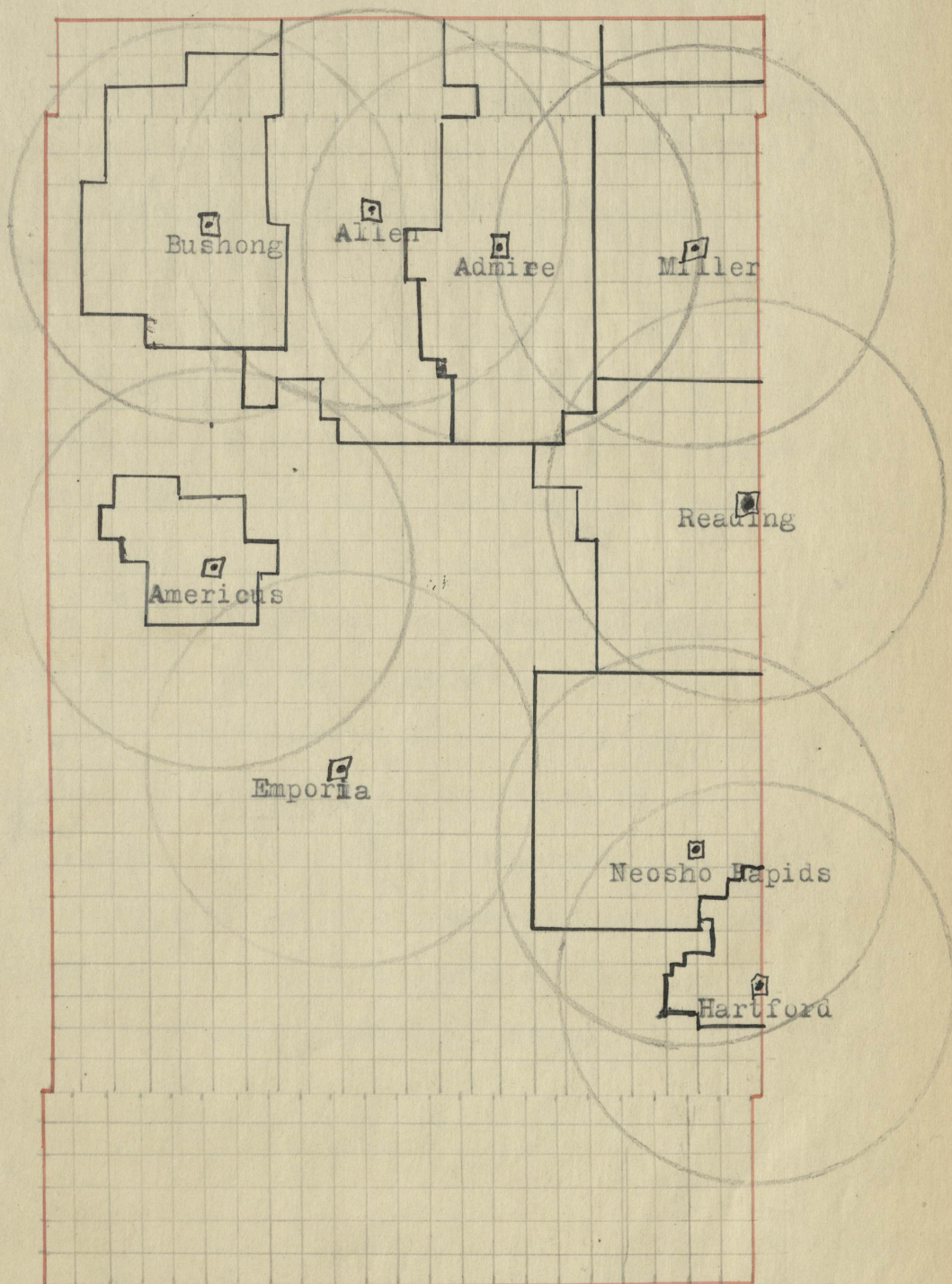


CHART IV: LYON COUNTY HIGH SCHOOL DISTRICTS



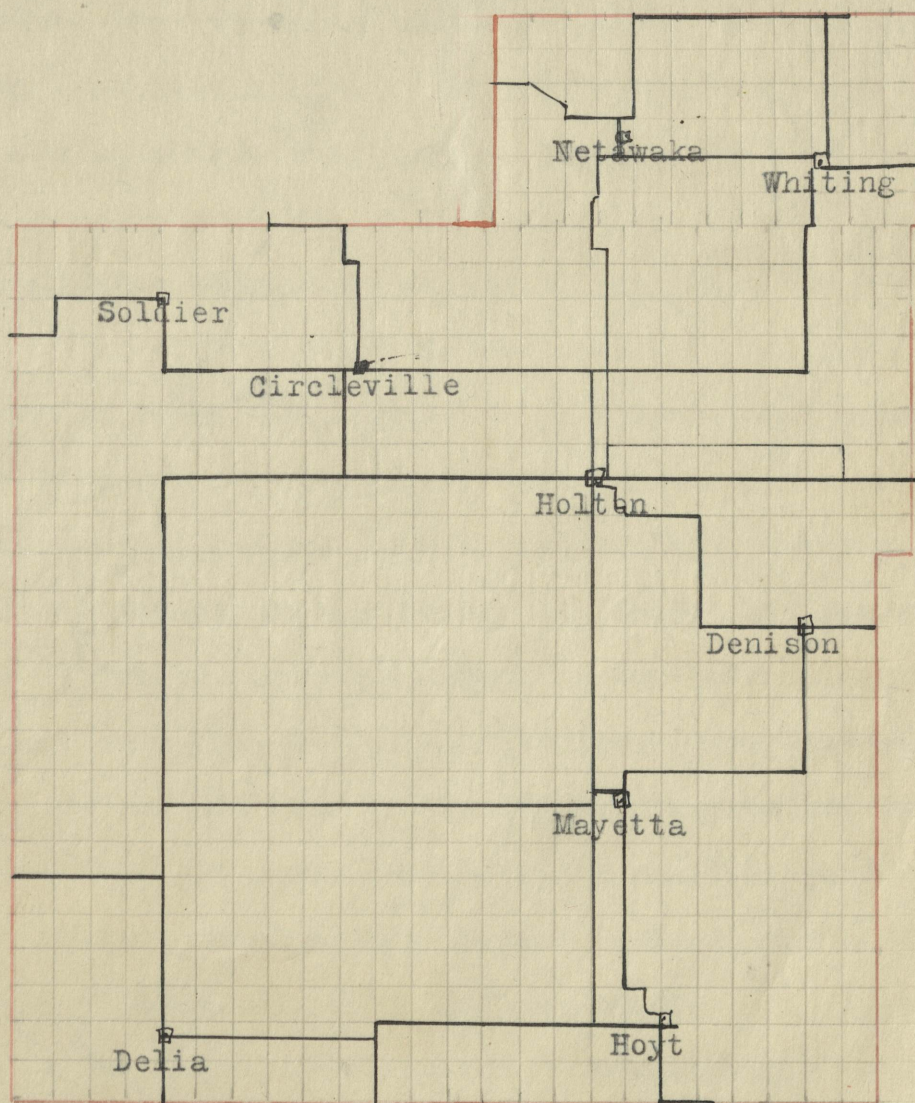
□ Location of Senior High Schools
 — Boundaries of Rural High School District.
 — Section Lines
 ○ six mile Radius of Circle

Some knowledge of the road improvement in each county was necessary before any plan of combining schools could be suggested. A road map of each county was secured from the county engineer. A map of Jackson county is presented on the following page showing the improved roads. These roads are, in most cases, well graded dirt roads. The maps received from the county engineer indicated that these roads are maintained by the county. A few miles of the roads are either paved or graveled.

The connecting roads between the towns in which the high schools are located are of the improved type. It may be expected that improvement of roads will take place in Kansas since the state now collects a gasoline tax which is to be used for that purpose. It was not considered necessary to present maps of the other three counties since the extent of the road improvement is much the same as that which exists in Jackson county.

CHART V: JACKSON COUNTY ROAD MAP

- Improved Roads
□ Location of High School
— Section Lines
— County Boundaries



Chapter III: Proposed Reorganization Pertaining to Senior High Schools.

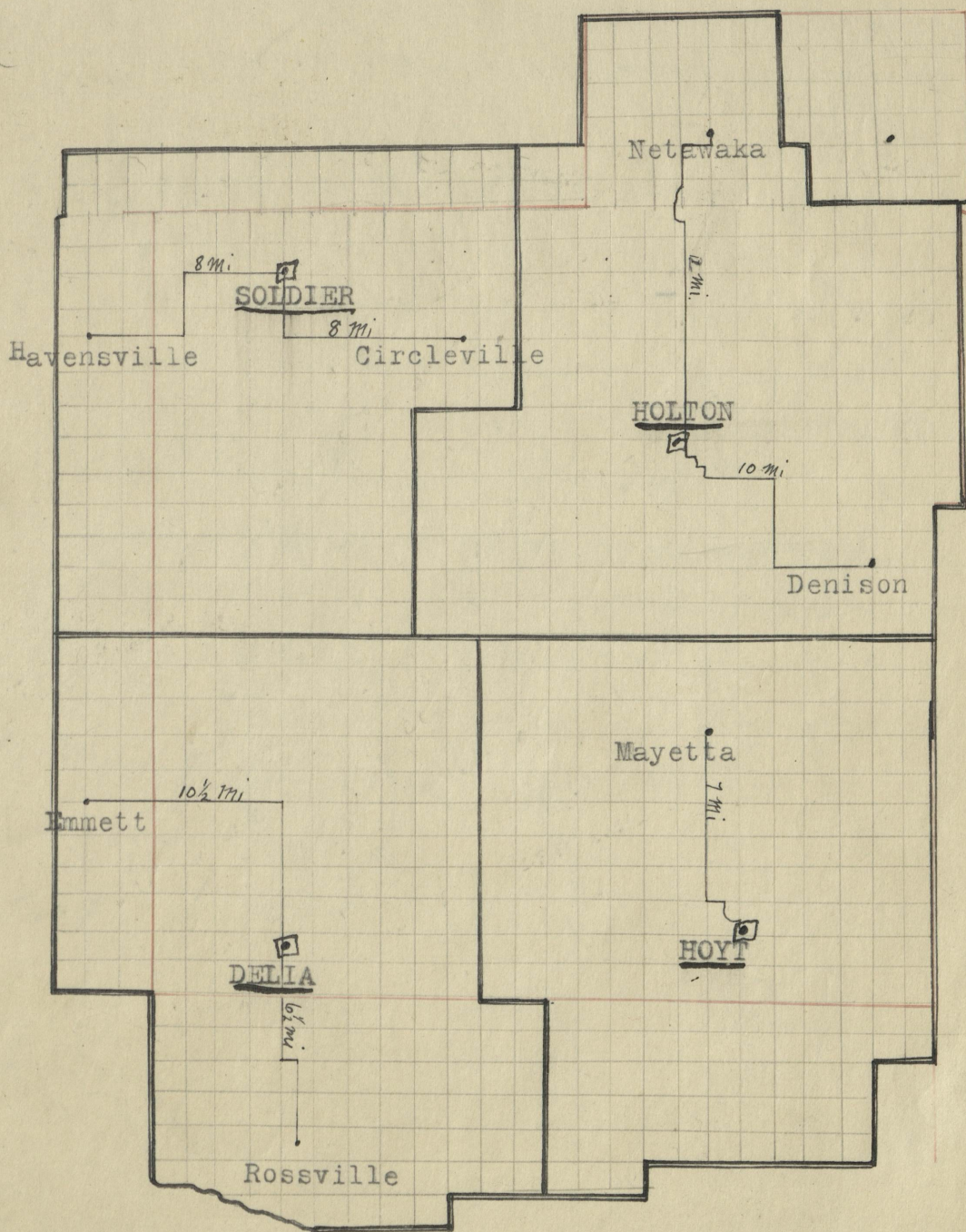
1. Proposed Districts and Enrollments

A plan will be presented here for the reorganization of the districts to provide more effective high school instruction than is at present provided. A map on the following page shows how the territory in Jackson county might be reorganized. In the reorganization of each district enough territory is included that the valuation of taxable property is high enough to provide high school facilities without an excessive tax levy.

The districts may be designated by the name of the town in which the proposed high school would presumably be located. In the organization of the Delia and Hoyt districts it seemed best to suggest that territory from Shawnee county be included. A portion of Pottawatomie county might also be included in the Delia district. It would seem best to include territory from Pottawatomie and Nemaha counties in the organization of the Soldier district. It seemed that Whiting could be combined to better advantage with Horton in Brown county rather than with any school in Jackson county.

The number and location of the improved roads were considered in suggesting the boundaries of each district. The roads between the location of the present high schools and the proposed central high school for the district are all of the improved type. The proposed Delia, Holton and Soldier districts would combine three smaller high schools.

CHART VI: Proposed Reorganization of High Schools in JACKSON COUNTY



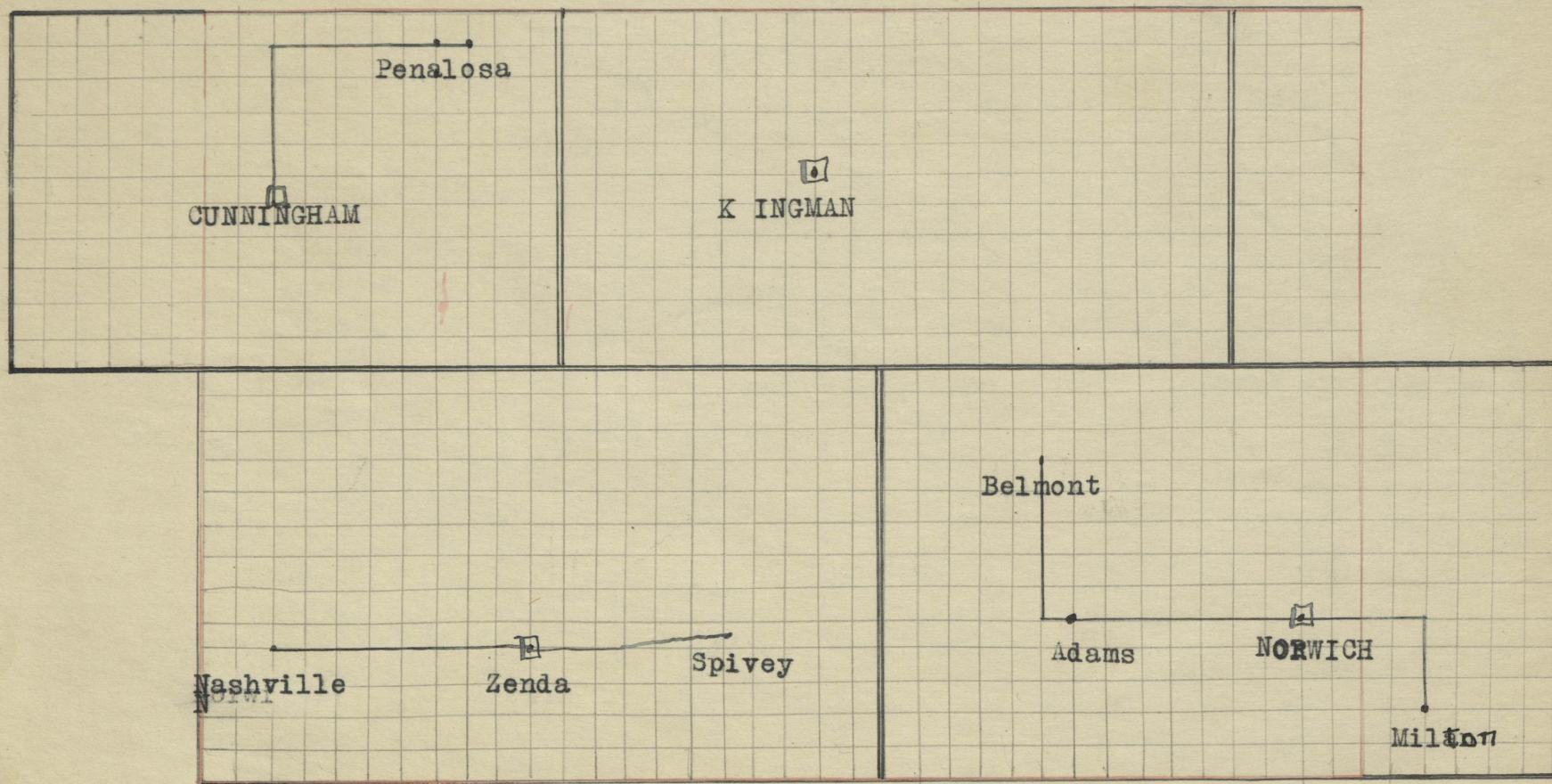
- District Boundaries
- County Boundaries
- Location of Combined High Schools
- Location of Present High Schools
- Improved Road connecting towns

The Hoyt district would be composed of two high schools.

The same general plan of procedure was followed in Jewell, Kingman, and Lyon counties for the reorganization of the districts as that used in combining the districts of Jackson county. The maps on the following pages show the proposed reorganizations of districts for each of the three counties.

The proposed plan of reorganization suggests only 17 high schools instead of the 44 which are located in this territory at the present time. Seven of the high schools were located in the territory in the adjoining counties which was included in the proposed districts. The enrollment in each of the proposed districts is estimated by assuming that all of the students in the present high schools of the district would attend the reorganized high school.

CHART VII. Proposed Reorganization of High Schools in KINGMAN COUNTY



- ==== Boundaries of Proposed Districts
- ==== County Boundaries
- Location of Reorganized High Schools
- Location of Present High Schools
- Improved Roads Between Towns

CHART VIII: Proposed Reorganization of High Schools in

JEWELL COUNTY

- Boundaries of Proposed District
- County Boundaries
- Location of Reorganized High Schools
- Location of Present High Schools
- Improved Roads Between Towns

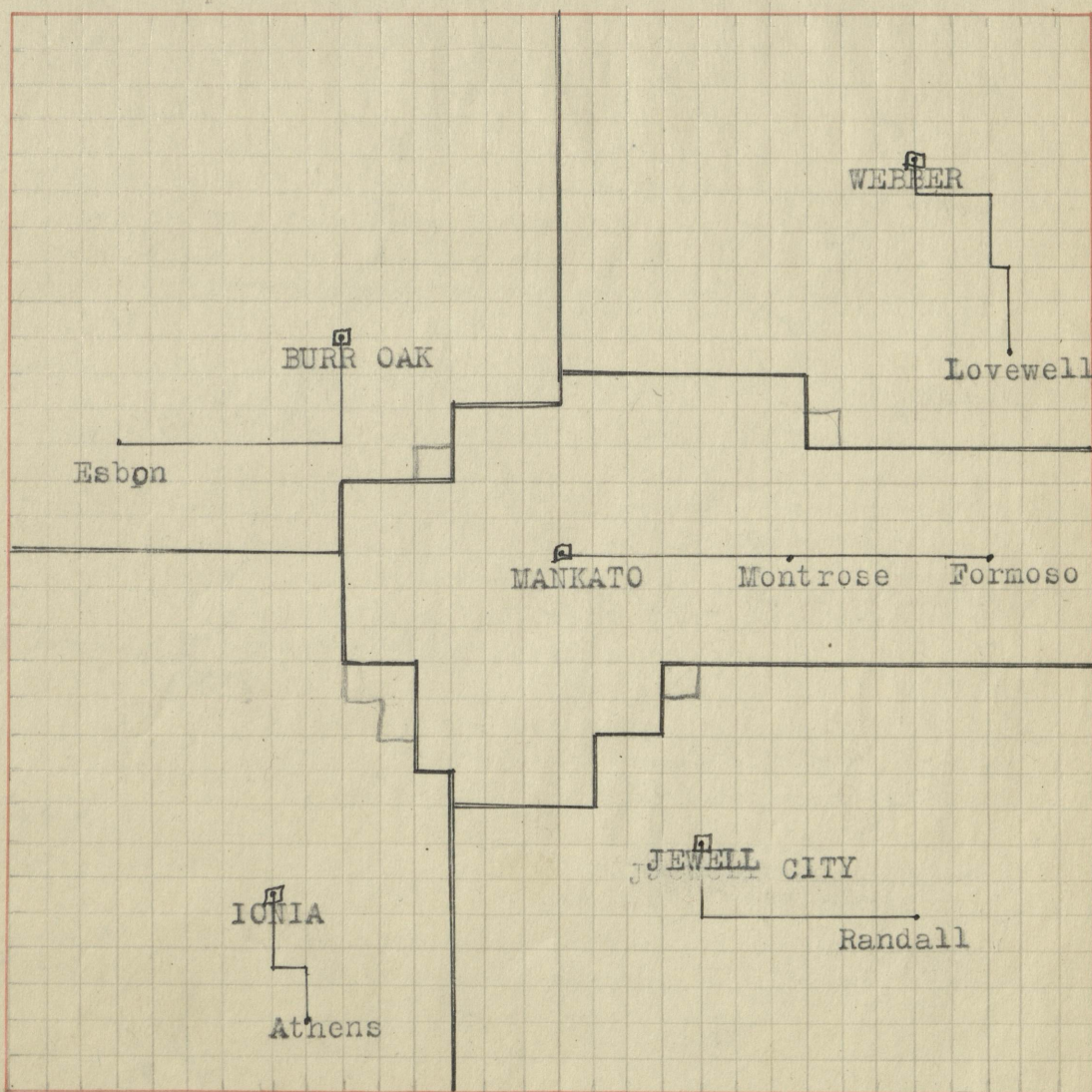
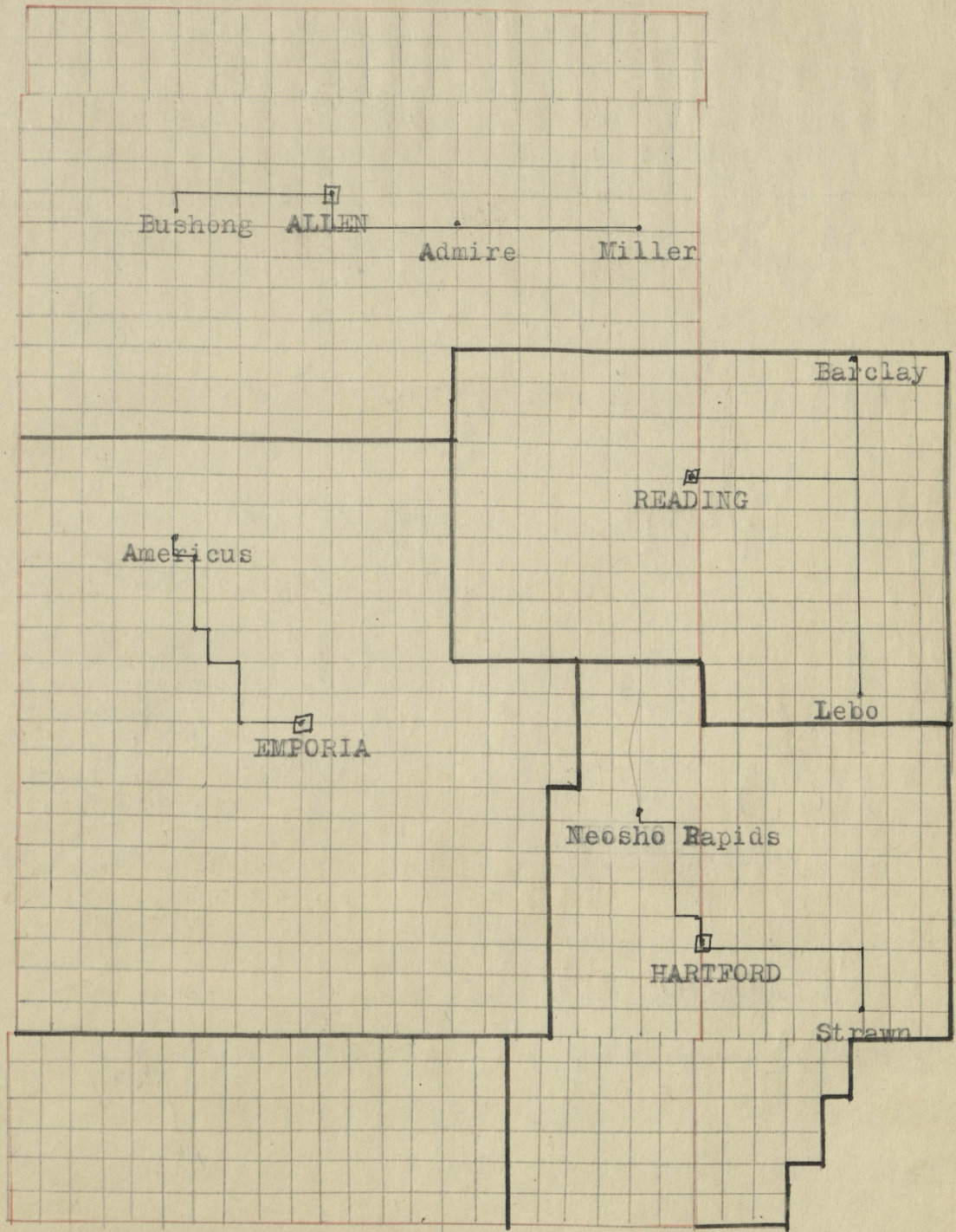


CHART IX: Proposed Reorganization of High Schools
in
LYON COUNTY



- Boundaries of Proposed Districts
- County Boundaries
- H Location of Reorganized High Schools
- Location of Present High Schools
- Improved Roads Between Towns

The enrollment in the combined high schools in each of the districts and the valuation of the taxable property is presented in table 6.

Table 6: Enrollment of High School and Valuation of Taxable Property in Each Proposed District of Jackson, Jewell, Kingman and Lyon Counties.

Proposed Districts	County	Enrollment in High School	Valuation
Delia)	Jackson	179	\$11,009,909
Holton)		355	16,960,946
Hoyt)		123	9,436,766
Soldier)		208	6,755,138
Burr Oak)	Jewell	229	9,743,030
Ionia)		99	5,438,675
Jewell City)		217	11,162,385
Mankato)		265	9,081,708
Webber)		76	7,030,045
Cunningham)	Kingman	77	5,628,614
Kingman)		355	15,051,235
Norwich)		170	8,064,415
Zenda)		99	6,165,576
Allen)	Lyon	198	9,616,505
Emporia)		954	29,134,618
Hartford)		168	7,192,429
Reading)		194	6,685,430

The enrollments of the reorganized high schools range from 76 pupils to 954 with a median enrollment of 175. The median enrollment of the proposed combined high schools is three times as large as the median in the third class city and rural high schools of the four counties at the present time.

In combining the schools it is assumed that the students could be transported from the present high school to the location of the proposed high school in each district. The estimated costs of operating a transportation bus carrying 25 pupils are analyzed in the following table.

Table 7: Estimated Cost of Operating a Bus With an Average Load of Twenty Five Pupils.

I. Variable Costs Per Mile (Average 11 cents)

	Internal Truck Estimate	: White Truck Estimate	: Engineer- ing Dept. of K.U. Estimate
Gas and Oil	2.45 cts.	: 3. cts.	: 2.5 cts.
Tires	3.33 "	: 1.5 "	: 4. "
Repairs	1.33 "	: 2.6 "	: 1. "
Depreciation	3.33 "	: 4. "	: 4. "
Total	10.44 cts	: 11.1 cts	: 11.5 cts

II. Fixed Charges Per Day

Insurance	\$.50
Driver of Bus	1.50
Garage	.75
Total	\$ 2.75

The variable costs represent the estimates of two truck companies and the engineering department of Kansas University. The insurance charges are the estimate of the Holmes Insurance Company of Lawrence, Kansas, covering fire and liability. The wages of the driver and the garage charges are based on the judgment of the writer.

The transportation costs presented in the preceding table seem to be as accurate an estimate as it is possible to secure without operating a number of busses over the proposed roads for several years.

Estimates were made of the number of busses and the miles it would be necessary for each bus to travel each day. The longest of the proposed routes would be 12 miles and the shortest 4 1/2 miles. The median length of route would be 8 miles. No information is available as to the locations of the homes of the pupils so the transportation distance was estimated from the location of the present high school to the location of the proposed school. It may be possible to route these busses so that students can be picked up nearer to their homes. In that case some bus routes might be longer but probably an equal number of routes could be shortened. Table 8 shows the number of busses necessary for each district, the pupils to be transported, and the total transportation costs per year as estimated by using the figures presented in table 7.

Table 8: Estimated Number of Busses, Pupils to be Transported, and Transportation Cost Per Year.

Proposed District	Busses	Pupils to be Transported	Transportation Costs per year
Delia	5	138	\$ 4,140
Holton	7	174	4,693
Hoyt	3	64	2,376
Soldier	5	127	4,019
Burr Oak	4	102	3,564
Ionia	2	38	1,246
Jewell City	3	79	2,435
Mankato	6	128	5,314
Webber	2	44	1,444
Cunningham	1	19	931
Kingman	0	0	0
Norwich	4	99	3,406
Zenda	3	63	2,277
Allen	6	153	4,673
Emporia	3	74	2,792
Hartford	3	59	2,376
Reading	4	119	3,643

That the transportation costs would not be a burden to these districts is shown by table 9. The tax necessary to provide for the estimated cost of transportation by districts would require a median levy of .4 mill.

Table 9: Tax Levies Necessary to Secure the Estimated Transportation Cost in Each Proposed District.

Proposed District	Tax Levies in Mills	Proposed District	Tax Levies in Mills
Delia	.4	Cunningham	.2
Holton	.3	Kingman	0
Hoyt	.3	Norwich	.5
Soldier	.6	Zenda	.4
Burr Oak	.4	Allen	.5
Ionia	.3	Emporia	.2
Jewell City	.3	Hartford	.4
Mankato	.6	Reading	.6
Webber	.3		

In the organization of the schools into classes it was assumed that the classes might well have an average membership of 20 pupils. In those high schools in the state which employ from 11 to 30 teachers the median size of class is now 22. (6) If it were assumed that each teacher would teach five classes of 20 pupils per day his teaching load would be 100 pupil-hours. If each student were expected to carry an average of four classes in the academic and vocational subjects, this would represent 4 pupil-hours each. Then a school having 200

(6) OBrien, F. P., Op. Cit.

pupils would have 800 pupil-hours and would require a total of 8 teachers. This estimate of the number of the teachers for each proposed district is shown in column 1 of table 10.

(7)
Paul R. Mort in his study "The Measurement of Educational Need" presents material in which he shows that the number of teachers needed for high schools is found by multiplying the average daily attendance by .0453. Since material for the average daily attendance of the schools in the proposed districts was not available it was assumed that the average daily attendance is 90 percent of the total enrollment in these schools. The number of teachers as estimated upon this basis is presented in table 10, column 2.

(7) Mort, Paul R., "The Measurement of Educational Need" Teachers College Contribution to Education No. 150.

Table 10: Estimated Number of Teachers for Each Proposed District.

Proposed District	Based upon the Pupil Hours a Teacher Will Teach	By Applying Statistical Procedure of Mort.
Delia	7	7.2
Holton	14	14.
Hoyt	5	4.9
Soldier	8	8.4
Burr Oak	9	9.3
Ionia	4	4.
Jewell City	9	8.8
Mankato	11	10.7
Webber	3	3.
Cunningham	3	3.1
Kingman	14	14.
Norwich	7	6.9
Zenda	4	4.
Allen (8)	8	8.
Emporia	38	39.8
Hartford	7	6.8
Reading	8	7.9

It will be noticed that there is a very close agreement between the two estimates. It is not assumed that a very liberal curriculum offering could be made with this teaching staff. Evidence was presented in table 3 to show that the schools as they are now organized are not offering a wide variety of courses each semester. Such subjects as Art, Dramatics, Music,

(8) Emporia has an enrollment three times as large as any other proposed district so classes could probably be organized with a larger average enrollment than 20 pupils. The valuation of the district is twice as large as any other of the districts. Since this problem is concerned with the small high school no attempt is made to make estimates for Emporia.

Physical Education and Vocational Training may be provided in one centrally located school more economically than in several small schools.

In estimating instruction costs it was assumed that the teachers and principals of the proposed high schools should be paid a salary equal to that paid in second class city high schools of Kansas. For the school year 1924-25 the teachers in the second class city high schools of Kansas were paid \$170 per month for nine months.⁽⁹⁾ The principals were paid \$260 per month for nine months.

This salary schedule may not be as high as that which should be paid to teachers and principals but it represents a better salary than the teachers in the smaller schools of the four counties now receive. The median salary of the teachers in the rural and third class city high schools of the four counties is \$160 per month. The median salary for the principals of the same schools is \$250 per month for nine months. The total instruction costs for each district are presented in table 11.

(9) OBrien, F.P., "Teachers Salaries in Kansas" Am. Sch. Bd. Jour. May, 1925

Table 11: Estimated Instruction costs per year for
Each High School in the Proposed Districts.

Proposed District	Estimated Instruction Cost
Delia	\$ 13,050
Holtcn	23,760
Hoyt	9,990
Soldier	14,580
Burr Oak	16,110
Ionia	8,460
Jewell City	16,110
Mankato	19,170
Webber	6,930
Cunningham	6,930
Kingman	23,760
Norwich	13,050
Zenda	8,460
Allen	14,580
Hartford	13,050
Reading	14,580

3. Advantage of Reorganized District Plan Over The Present Situation.

The sum of the estimated instruction and transportation cost was reduced to a cost per pupil-hour in order to make a comparison with costs under present conditions. The median instruction cost in the rural and third class city high schools is \$13.79 per pupil-hour with the middle 50 percent ranging from \$11.33 to \$18.50. The median estimated instruction and transportation costs in the reorganized districts is \$12.00 per pupil-hour with the middle 50 percent ranging from \$11.00 to \$12.67. This would seem to show that the transportation and instruction costs would not be more expensive in the reorganized districts than the instruction

costs in the smaller schools as they are now organized.

Equipment, supplies, and fuel might be purchased more economically by one large school than by several small schools. Most of these smaller schools offer only one class in such subjects as manual training and home economics. That means that the equipment may be idle during a large part of the day. When a larger number of students are brought together several classes in these subjects may be organized so that the equipment will be in use during the most of the day.

In considering the question of the amount that a district should pay for its school, the educational returns that it receives for the money invested need to be taken into consideration. It is conceivable that a school which costs more may be giving enough more educational returns so as to warrant the cost. On the other hand, a school district should have some assurance that it is getting what it pays for.

The valuations of the taxable property in the rural and third class city high school districts in these four counties are on the average very low. The median valuation is a little less than two million dollars. The last legislature passed a bill providing that a rural high school cannot be organized unless there is a valuation of two million dollars in the proposed district.

This is recognized by the legislature as the minimum valuation upon which a rural high school district should be organized. Fifty four percent of the smaller high schools of the four counties, which were organized before the bill went into effect, are below the minimum standard set by the state legislature for the organization of a rural high school.

Because they have a low valuation it becomes necessary for some of the rural districts to extend the tax levy almost to the maximum limit. Two of the rural high school districts do reach the maximum limit of 6 mills and the median levy is 4.1 mills. The levy for the district and consolidated high school is not included because the high school levy is not kept separate from the elementary school levy.

In the proposed reorganized districts the valuations as shown in table 6 ranges from five and one half million to twenty nine million dollars. The proposed district having the lowest valuation has approximately three times as large a valuation as the median valuation of the present district. This larger valuation is secured by combining some of the present high school districts and including all territory of the county in some high school district.

In order to estimate the current expenses for operating the schools in the proposed districts it was

assumed that 70 percent of the total current expenditures, exclusive of transportation costs, would be for instruction. In a study by the research department of the National Educational Association ⁽¹⁰⁾ involving 69 cities under 5,000 population, it was found that the instruction costs were 72 percent of the total ⁽¹¹⁾ current expenses. W. F. Russell in a study of 19 Iowa cities under 2,000 population found that instruction costs were 69.8 percent of the total current expenses.

An estimate of the instruction costs for each district was presented in table 11. The current expenditures were computed from this estimate for each proposed district. To this sum, the transportation estimates, presented in table 8, were added making an estimate of the total amount necessary for operating the high school and transporting the pupils in each district. The tax which it would be necessary to levy upon the taxable property in each district was then computed. This material is presented in table 12.

(10) "Current Facts on City School Systems" Research Bulletin of the N.E.A. Jan. 1924

(11) Russell, W. F. "School Finance in Iowa Cities" Univ. of Iowa Exten. Bul. Number 69, Aug. 1920

Table 12: Total Estimated Operating and Transportation Cost and the Tax Levy in each District.

Districts Proposed	Current Expenses Per Year	Tax Levies in Mills
Delia	\$ 22,830	2.1
Holton	38,635	2.3
Hoyt	20,041	2.2
Soldier	20,829	3.1
Burr Oak	26,578	2.6
Ionia	13,332	2.5
Jewell City	25,449	2.3
Mankato	32,699	3.7
Webber	11,344	1.7
Cunningham	10,830	2.3
Kingman	33,942	2.3
Norwich	22,049	2.8
Zenda	14,362	2.4
Allen	25,501	2.7
Hartford	21,019	3.
Reading	24,471	3.7

No attempt has been made to estimate the building needs of each district. In some districts the building which is already erected at the location of the proposed high school might be utilized without much additional expense. In other districts, it would be necessary to provide an entirely new building. No uniform method of estimating the building needs would be satisfactory for all of the districts.

During a period of years each of these districts, as they are organized at the present time will have to care for a building program. A saving could probably

be effected on the buildings if some of the high schools were combined for it would be a matter of economy to build one building large enough to accommodate the students in a given area rather than two or three smaller buildings.

The establishment of the larger districts seems to be a factor in equalizing the burden due to unequal taxation. The median tax levy necessary to secure the amount estimated for operating the reorganized schools in the four counties is 2.8 mills with a range from 1.7 mills to 3.7 mills. This represents a range of 2 mills. In the rural high school districts of the four counties at the present time the range of the tax levy for maintaining the high schools is from .7 mill to 6 mills or a range of 5.3 mills.

Plans for state aid to the weaker districts have been advocated but it would seem that state aid should be granted only after the territory is organized as effectively as possible. State aid could also be more easily administered through the larger units than through the great number of small high schools.

If the proposed plan of reorganization were put into effect in the four counties the median number of teachers required would be 8 per school. The grouping of subjects presented in table 14 show that under the proposed plan of reorganization a teacher

would not need to teach a wide range of subjects. No attempt is made to justify these subjects in preference to others but all of the subjects listed are offered in the present course in some of the schools. A complete study of the curriculum needs of the school should be made but that would go beyond the scope of this study.

Table 13: Subjects and Number of Classes A Teaching Staff of Eight Could Care For.

Subject	Number of Classes	:	Subject	Number of Classes
English	5	:	Home Economics	5
English	2	:	Latin	3
Normal Training	3	:	Mod. Languages	2
Mathematics	5	:	Physics	1
History	4	:	General Science	2
Civics	1	:	Biology	2
Agriculture	3	:		
Manual Training	2	:		

Only two of the teachers would be doing work in three different fields of instruction each semester and these fields are more closely related than the subjects which many of the teachers now teach. More than one-third of the teachers would have all of their classes in one field of instruction and the others would have only two different subjects.

In the rural and third class city high schools of the four counties at the present time the median number of different subjects taught in the school is 10. The preceding table shows that the 8 teachers could teach a total of 12 different subjects each semester. A complete study of the curriculum needs of the schools of this type should be made before it is possible to state definitely what subjects should be taught.

Chapter IV: Proposed Reorganization with Reference To Junior High School.

1. Present Needs and Plan for Meeting Them (12)

In an investigation made by a committee consisting of F. P. OBrien of the University of Kansas, D.A. Worcester of the Kansas State Teachers College of Emporia and E. N. Mendenhall of the Kansas State Teachers College of Pittsburg, with reference to a comparison of instruction in different types of elementary schools it was found that 'the boys and girls in one teacher schools are in general getting an inferior kind of instruction and they are usually taught by an inexperienced, poorly prepared and poorly paid teacher.' They state 'That with such handicaps, effective education is impossible for either upper or lower grade pupils in the one teacher schools of the state.

Table 14 shows the enrollment in the 7th and 8th grades of the one teacher elementary schools in Jackson, Jewell, Kingman and Lyon counties.

Table 14: Enrollment in 7th and 8th Grades of the One Teacher Schools in the Four Counties

	<u>No. of Pupils</u>					Total	Med.
	1-2	3-4	5-6	7-8	9+		
Number of Schools	110	115	83	55	23	386	4
Percent of Total	29	29	22	14	6		

(12) OBrien, F. P., Worcester, D. A. Mendenhall, E.N., "The Results of Instruction in Different Types of Elementary Schools of Kansas."

Twenty nine percent of the one-room schools, maintaining a 7th or 8th grade, have an enrollment of one or two pupils in the combined 7th and 8th grades. Fifty eight percent of the schools have an enrollment in the two grades of four pupils or fewer. The median number of pupils in the combined grades is four. This small enrollment in many of these schools makes it impossible for the students to share much in group activities. It seems to be needlessly expensive to duplicate the work of these grades in so many schools.

On the other hand, the material presented in table 14 shows that 20 percent of the schools have an enrollment of 7 or more in the two grades. When a teacher is attempting to teach 8 grades, an enrollment of 7 or more in the two upper grades represents quite a heavy teaching load. A common criticism of the one-room school is 'the teacher spends too much time preparing the 7th and 8th grade students for the county examinations and neglects the students in the first six grades.'

A plan for the establishment of a junior high school in connection with the senior high school in each of the proposed districts will be presented here. The 7th and 8th grade pupils could be taken from the one-room schools to become a part of the junior high school.

This could make it possible for the elementary schools to teach grades 1-6 inclusive. Perhaps it would be possible for the teachers in the one-room schools to secure better results in the first six grades if they did not have to be responsible for the 7th and 8th grades.

(13)
The committee studying instruction results in Kansas recommended to the School Code Commission the 'limitation of one-room schools to grades one to six where they cannot be displaced by a better type of organization.'

If a well organized junior high school were established the 7th and 8th grade students might receive many of the advantages claimed for the junior high school. In considering the advantages of the junior high school organization it is not the intention of this study to attempt to justify all of the claims made for that type of an organization but mention will be made of the most commonly claimed advantages.

(14)

Advantages claimed for the junior high school.

1. Classes of approximately normal size may be organized.
2. A more nearly complete use of the school plant may be effected.
3. Differentiated curricula may be offered.
4. Departmental teaching is provided and promotion can be made by subject.
5. It is possible to find and develop better teachers and therefore secure better teaching.

(13) OBrien, F.P., Worcester, D.A., Mendenhall, E.N., "The Results of Instruction in Different Types of Elementary Schools in Kansas."

(14) Briggs, T.H., "The Junior High School."

6. Provides better for the needs of pupils due to individual differences of ability, prospective career and sex.
7. Tends to increase the persistence of pupils in school.
8. Facilitates the transition of pupils to higher schools by destroying the sharp break between elementary and secondary education, by removing the change to a higher school from the period at which the age of compulsory education for most pupils terminates.
9. Better develops the character of individual pupils.

In addition to the general advantages of a properly organized junior high schools, certain other results might follow when the junior high school becomes a part of the educational scheme of rural communities. These include such advantages as the reduction of the rural school to six grades, encouragement for further consolidation, encouragement of town and country cooperation and good will.

In this section of the study the junior-senior high school will be considered as an organization of six years in length. In the proposed districts having the smaller enrollments, it would be a matter of economy to maintain only one building for the six grades rather than a separate building for the senior and the junior organization. A more effective use of the teaching force could be secured if the junior-senior high school were one organization than if the two were separate. However, if it seemed best it would be possible to separate this organization into a 4-2 or a 3-3 plan of high school.

The same procedure for estimating transportation,

instruction and total current expenses for the junior-senior high school was followed as that used in securing estimates for the senior high school organization.

Transportation routes for each district were tentatively mapped out. No student would be compelled to walk more than two miles from the elementary school which he attended. The routes were arranged so that about three fourths of the distance each bus would travel could be made on the improved roads.

The transportation costs were then computed by using the estimate for operating the busses presented in table 7 page 28. The estimates for each of the proposed districts is presented in table 15.

Table 15: Estimated Enrollment of Junior-Senior High Schools, The Number of Pupils to Be Transported, the Number of Busses and the Total Transportation Costs for Each Proposed District in the Four Counties.

District	Enrollment	Pupils to be Transported	Busses Needed	Transportation Costs Per Year
Delia	377	315	15	\$ 12,711
Holton	716	346	13	12,217
Hoyt	297	220	9	8,296
Soldier	494	296	12	10,256
Burr Oak	420	265	12	11,147
Ionia	211	129	5	5,128
Jewell City	396	208	10	9,464
Mankato	451	249	11	10,435
Webber	194	146	6	9,464
Cunningham	171	82	4	3,881
Kiggman	555	113	6	6,296
Norwich	291	203	9	7,979
Zenda	207	159	7	5,997
Allen	394	321	14	12,711
Hartford	398	227	9	7,939
Reading	313	212	9	8,257

The enrollment of the proposed districts range from 171 pupils to 716 pupils. The median enrollment would be 340 pupils. The enrollment would probably be large enough that it would be possible to organize and conduct a school in each district which would give the pupils many advantages that they are not now receiving.

Estimates for the number of teachers necessary were made in the same way that they were estimated for the senior high school alone. Instruction costs were then computed by assuming that both the junior and senior high school teachers would receive \$170 per month for nine months and that the principal would receive \$300 per month for nine months. The teachers' salary is the same as that paid to senior high school teachers in the second class cities at the present time. The principal's salary is the suggestion of the writer as to what ought to be paid in that type of a school.

Table 15 shows the estimated number of teachers necessary for each school and the instruction costs per year.

Table 15: Estimated Number of Teachers and the Instruction Costs in Each Proposed District.

District	Estimated Number of Teachers	Estimated Instruction Costs Per Year
Delia	15	\$ 25,650
Holton	29	47,070
Hoyt	12	21,060
Soldier	16	27,180
Burr Oak	17	28,710
Ionia	9	16,470
Jewell City	16	27,110
Mankato	18	30,240
Webber	8	14,940
Cunningham	7	13,410
Kingman	23	37,890
Norwich	12	21,060
Zenda	8	14,940
Allen	16	27,180
Hartford	16	27,180
Reading	13	22,590

The median number of teachers necessary in the proposed districts as estimated in the preceding table is 15. The median enrollment as shown in table 14 would be 340 pupils. This would represent an average pupil load of 23 for each teacher in the junior-senior high school. The median pupil-load for each teacher in the senior high schools of second class cities is 20. The median pupil-load of teachers in the junior high schools of second class cities is 27. The report of the enrollment and the number of teachers in the Kansas State Educational Directory is the source of this statement. When measured by the actual situation in the second class city high schools the above estimate of the number of teachers seems liberal.

The total current expenses for operating the schools were computed by assuming that instruction costs would be 70 percent of the total, exclusive of the transportation costs. To this total, the transportation estimates from table 14 were added to secure the total cost of operating the school and transporting the pupils. The tax that it would be necessary to levy in order to secure the funds for total current expenses of each district was then computed. This material is presented in table 16.

Table 16: Estimated Total Current Expenses and the Tax Levies for Operating Junior-Senior High Schools in Each Proposed District.

Proposed District	Estimated Total Current Expenses	Tax Levies in Mills
Delia	\$ 47,018	4.3
Holton	79,460	4.7
Hoyt	39,381	4.1
Soldier	49,084	7.3
Burr Oak	52,161	5.4
Ionia	28,656	4.8
Jewell City	48,292	4.4
Mankato	53,635	6.
Webber	26,648	3.7
Cunningham	23,038	4.1
Kingman	60,424	4.1
Norwich	38,064	4.8
Zenda	27,341	4.5
Allen	51,540	5.3
Hartford	46,768	6.5
Reading	40,528	6.1

The median estimated tax levy for operating the junior-senior high school in the proposed districts is 4.8 mills. This is only .7 of a mill more than the

median levy for operating the rural high schools at the present time. The median tax levy for the rural high schools in the four counties is 4.1 mills. The median tax levy for maintaining the one room elementary schools is 3.5 mills. No estimate has been made of building costs. Evidence concerning the possibility of using some of the present buildings is not available.

SUMMARY AND CONCLUSIONS

1. This problem is an attempt to show how a plan to improve the opportunities for more effective high school instruction, than is at present provided, might be applied in Jackson, Jewell, Kingman and Lyon counties.

2. Evidence is presented which shows that, in the rural and third class city high schools of the four counties at the present time, teachers teach an average of three different subjects and are not adequately prepared to teach all of these subjects.

3. The smaller high schools of the four counties are offering a very limited course of study yet the instruction costs are high when compared to high schools in the second class cities of Kansas.

4. A plan showing the possibility of combining a number of small four year high schools into fewer centrally located high schools is presented. A second plan shows the possibility of establishing junior high schools in connection with the proposed senior high schools.

5. Transportation, instruction, and total current expenditures were estimated for operating a senior high school in each proposed district.

6. It would be possible to operate a senior high school in each proposed district on a median levy of 2.8 mills.

7. A junior high school could be established in connection with the senior high school in each proposed district which might secure for the 7th and 8th grade pupils the advantage claimed for the junior high school and relieve the one teacher rural school of the task of providing instruction in these grades.

8. A junior-senior high school could be operated in each proposed district on a median levy of 4.8 mills.

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A STUDY OF SIZE AND VARIETY OF TEACHING LOAD IN KANSAS HIGH SCHOOLS.

Are you a teacher, principal, superintendent (Underscore position)

Teaching Experience: No. years taught previous to this year:

In elementary grades or rural schools _____

In Junior high school? _____ In Senior high school? _____

In present position? _____

Teaching preparation:

High school--No. years _____ University--No. yrs. _____

Normal school--No. yrs. _____ Postgraduate--No. yrs. _____

College--No. yrs. _____ Degrees held _____

Indicate in the list following your academic preparation in terms of high school units and college hours. (A high school unit represents completed work in a subject for 4 or 5 hours a week for 36 weeks. A college hour means one hour per week of recitation or 2 hours per week of laboratory for a half year.)

Subject	H.S. Units	College Hours	Subject	H. S. Units	College Hours
English	_____	_____	Shop Work	_____	_____
Mathematics	_____	_____	Philosophy	_____	_____
History	_____	_____	Music	_____	_____
Economics	_____	_____	Physical Ed.	_____	_____
Polit. Sci.	_____	_____	Home Making	_____	_____
Sociology	_____	_____	Commercial	_____	_____
Physics	_____	_____	Latin	_____	_____
Chemistry	_____	_____	French	_____	_____
Zoology	_____	_____	Spanish	_____	_____
Botany	_____	_____	Greek	_____	_____
Physiography	_____	_____	Other Subjs.	_____	_____
Agriculture	_____	_____		_____	_____
Physiology	_____	_____		_____	_____
Geology	_____	_____		_____	_____
Astronomy	_____	_____		_____	_____
Gen. Psych.	_____	_____		_____	_____
German	_____	_____		_____	_____

Report here what classes you are teaching during the current year:

Subj.	1st or 2nd half of yr.	Periods per week	No. weeks in course	No. pupils in class
_____	_____	_____	_____	_____
_____	_____	_____	_____	_____
_____	_____	_____	_____	_____
_____	_____	_____	_____	_____
_____	_____	_____	_____	_____
_____	_____	_____	_____	_____

What is your present salary per month? _____. No. mos. in yr. _____